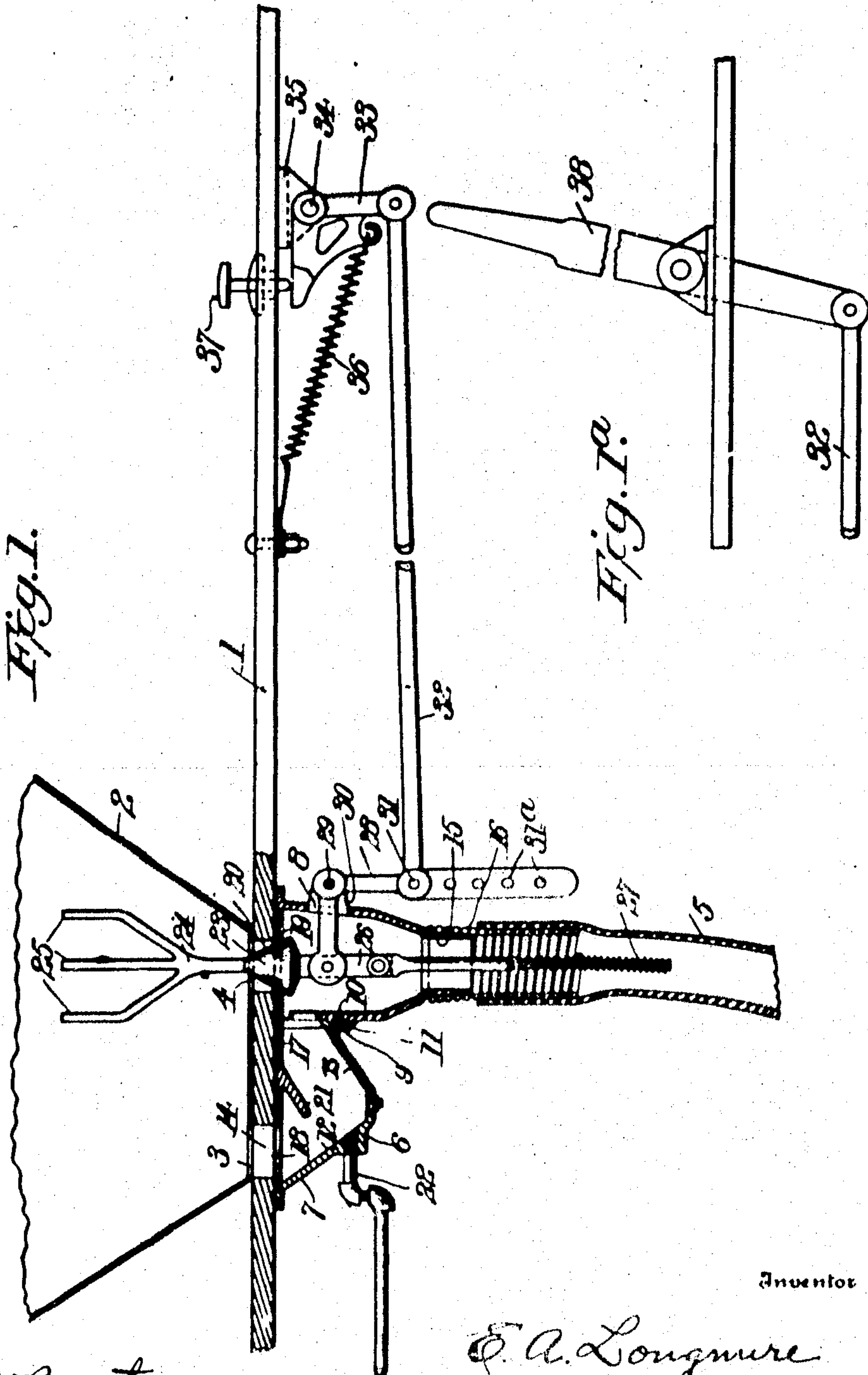


E. A. LONGMIRE.  
 DEVICE FOR SANDING TRACKS.  
 APPLICATION FILED FEB. 16, 1909.

931,444.

Patented Aug. 17, 1909.

2 SHEETS—SHEET 1.



Witnesses  
 Grace O. Dutton  
 Mary W. Hammer

Inventor  
 E. A. Longmire  
 Shurtzoff & Mason  
 Attorneys

E. A. LONGMIRE.  
 DEVICE FOR SANDING TRACKS.  
 APPLICATION FILED FEB. 16, 1909.

Patented Aug. 17, 1909.

2 SHEETS—SHEET 2.

981,444.

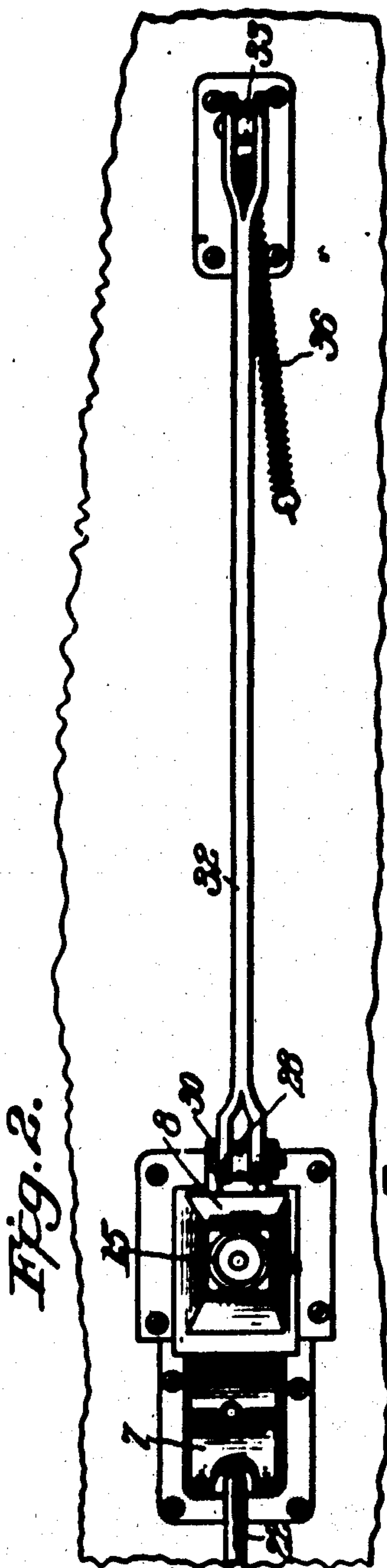


Fig. 2.

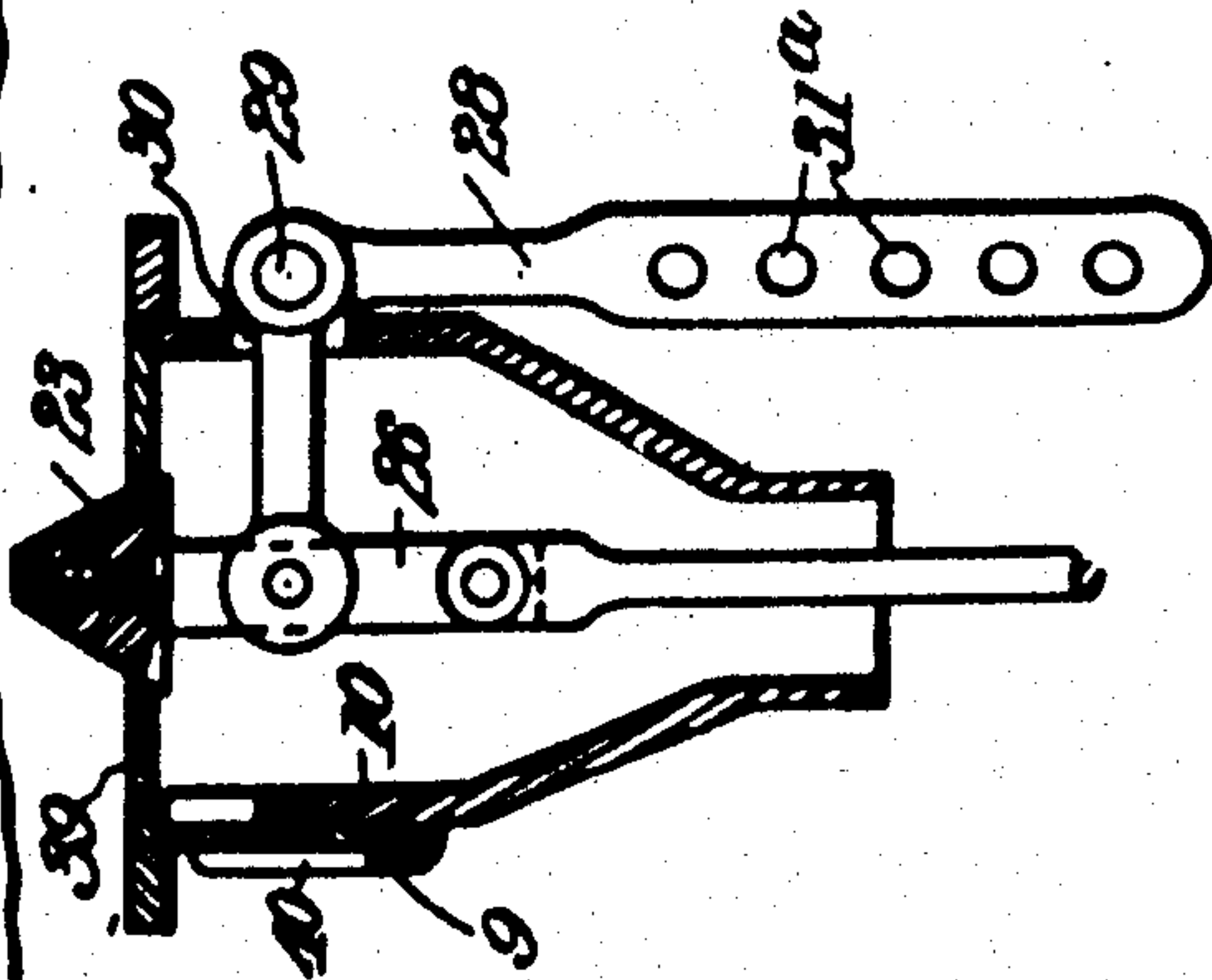


Fig. 4.

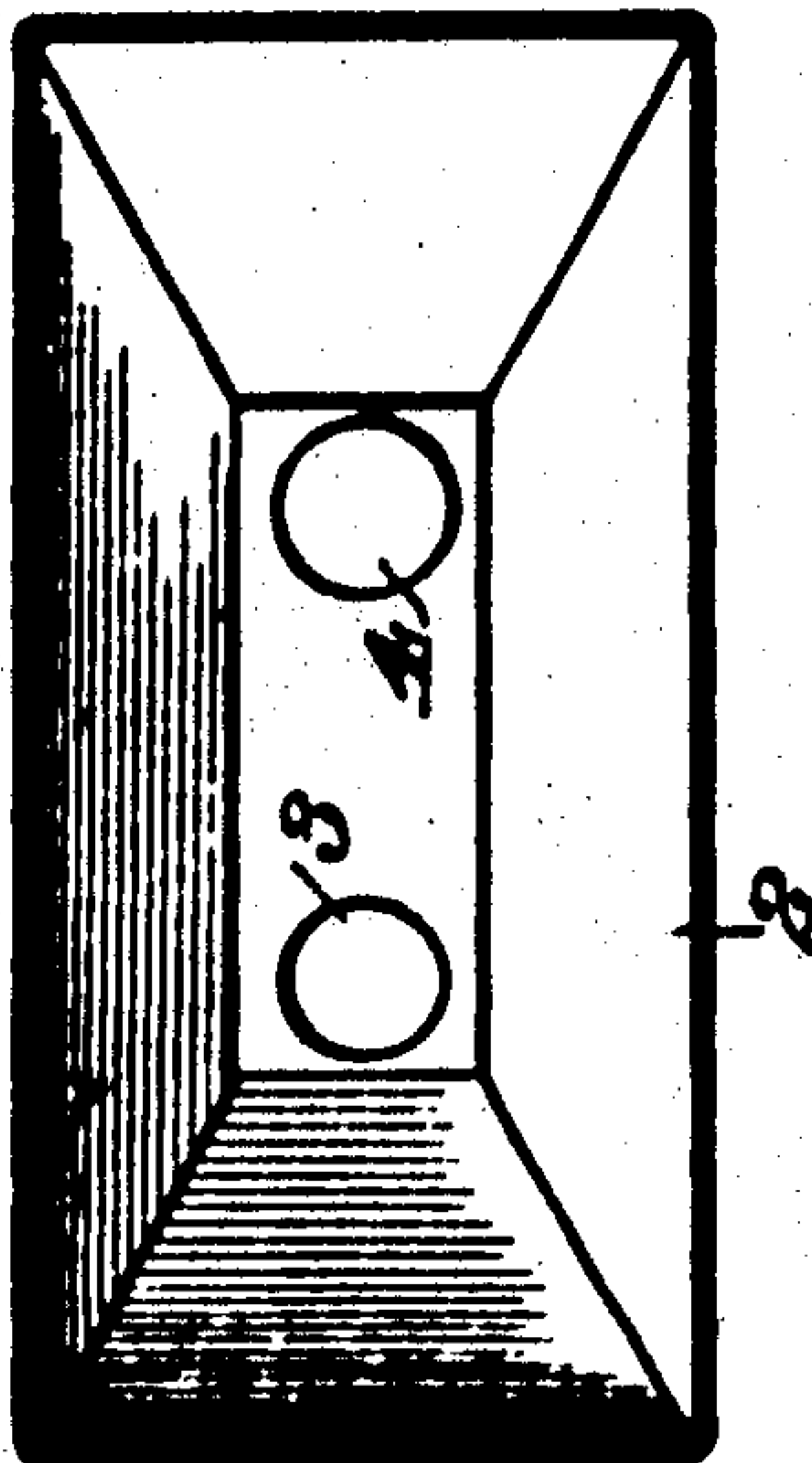


Fig. 3.

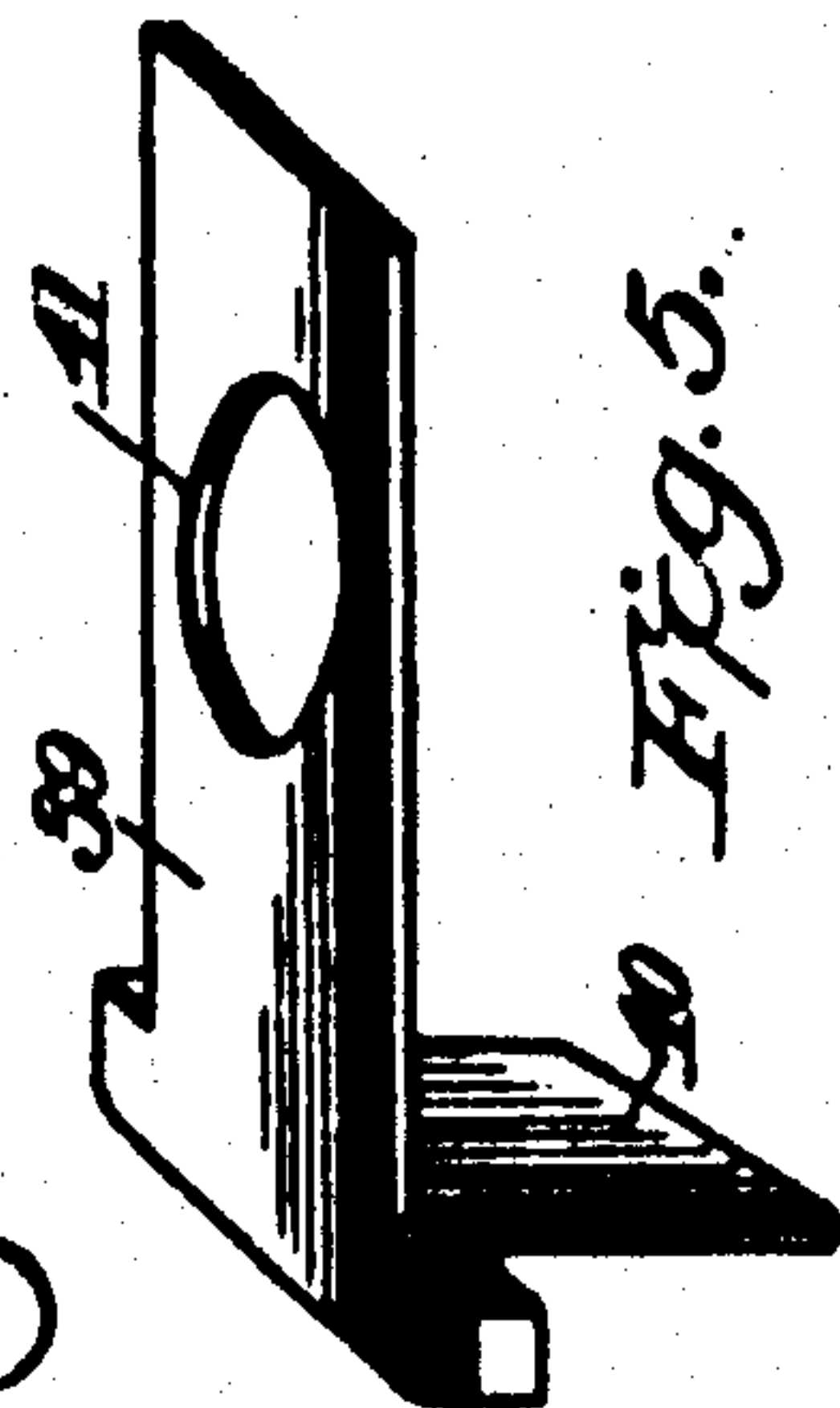


Fig. 5.

Witnesses  
 Grace P. Burton  
 Mary W. Hammer

Inventor  
 E. A. Longmire  
 Sturtevant & Mason  
 Attorneys



# UNITED STATES PATENT OFFICE.

ERNEST ARCHIBALD LONGMIRE, OF NORFOLK, VIRGINIA, ASSIGNOR OF ONE-HALF TO  
EDWIN C. HATHAWAY, OF NORFOLK, VIRGINIA

## DEVICE FOR SANDING TRACKS.

No. 931,444.

Specification of Letters Patent.

Patented Aug. 17, 1909.

Application filed February 16, 1909. Serial No. 798,899.

*To all whom it may concern:*

Be it known that I, ERNEST ARCHIBALD LONGMIRE, a citizen of the United States, residing at Norfolk, in the county of Norfolk, State of Virginia, have invented certain new and useful Improvements in Devices for Sanding Tracks, of which the following is a description, reference being had to the accompanying drawing, and to the figures of reference marked thereon.

My invention relates to new and useful improvements in devices for supplying sand to tracks, and more especially for use in sanding the rails of railways.

An object of the invention is to provide a sanding device which may be mechanically controlled or pneumatically controlled as desired.

A further object of the invention is to provide a device which may be readily attached to a car which is equipped solely with mechanically controlled means for the sanding device.

A further object of the invention is to provide a sanding device with a controlling valve which shall be durable in construction and efficient in operation.

Still further objects of the invention will in part be obvious, and will in part be hereinafter more fully described.

In the drawings which show by way of illustration one embodiment of the invention; Figure 1 is a vertical section through my device showing the same applied to the floor of a car and showing in a general way, the mechanism for operating the mechanically controlled valve. Fig. 1<sup>a</sup> shows modified form of operating device. Fig. 2 is a bottom plan view of the same. Fig. 3 is a top plan view of the hopper. Fig. 4 is a vertical sectional view showing the portion of the casing used when my device is controlled solely by mechanical devices. Fig. 5 is a perspective view of a plate which may be used with my device when operated solely by mechanical means.

In the drawings, 1, represents the usual floor or platform of a car, and the structure of the car has not been illustrated in the drawings, in order to save confusion.

2, is the hopper for containing the supply of sand and said hopper preferably rests on the floor 1 of the car. The hopper as herein

shown, is provided with an oblong bottom in which are formed two openings 3 and 4.

5, is the usual delivering pipe which carries the sand from the hopper and delivers the same at the desired point on the rail in front of the wheels. As a means for controlling the delivering of the sand from the hopper 2, into the pipe 5, I have provided a casing 6, which as herein shown, is made in two parts 7 and 8, which may be connected together by any suitable means.

As herein shown, the portion 8 of the casing, is provided with spaced parallel lips 9 and 10 which are adapted to engage a corresponding lip 11 formed on the section 7. The section 7 of the casing as herein shown, is provided with downwardly inclined walls 12 and 13, which form a pocket into which the sand will flow from the hopper 2, through the opening 3, and a corresponding opening 14 formed in the floor 1.

The inclined wall 12 extends upward to the floor 1, and may be secured thereto in any suitable way. The inclined wall 13 extends upward and meets the wall of the section 8 at a distance below the flooring 1, so as to form a passage from the pocket into the section 8 of the casing. The section 7 is of course, provided with side walls for closing the pocket.

The section 8 of the casing projects downwardly and is provided with a hollow cylindrical portion 15 to which may be attached a flexible pipe 16, herein shown as formed of a spirally wound wire. Said flexible section 16, extends into the upper end of the pipe 5 and serves as a means for supporting said pipe.

In the upper portion of the casing 6, I have provided a plate 17, which rests on a ledge formed in the upper side of the casing. Said plate 17 is provided with two openings 18, and 19. The opening 18 is in register with the opening 14 in the floor and the opening 3 in the hopper, while the opening 19 is in register with an opening 20 in the floor and the opening 4 in the hopper. The plate 17 is provided with a downwardly projecting inclined wall 21, which is substantially parallel with the wall 13 of the section 7. This wall 21 serves as a means for controlling the amount of sand running from the hopper into the pocket and prevents the



and from flowing of its own weight over into the section 8 of the casing. The section 7 of the casing is provided with an air pipe 22 which leads to any suitable source of air supply, and to a controlling valve.

Upon manipulation of the valve, the air will be directed into the pocket so as to force the sand in the pocket out through the passage between the pocket and the section 8 of the casing and into the pipe 5.

As a means for mechanically controlling the flow of sand from the hopper 2 into the pipe 5, I have provided a valve 23, which as herein shown is conical in shape and fits the opening 19 in the plate 17. The valve supports a stem 24 which is preferably threaded into said valve, and carries spaced fingers 25, 25, which operate to stir and loosen the sand in the hopper whenever the valve is moved. The valve 23 is also provided with a downwardly projecting stem 26 which extends down through the cylindrical portion 15 of the casing 8 into the flexible section 16. The stem 26 also carries a flexible extension 27 which extends a short distance down into the pipe 5, and as the valve is actuated, the stem 16 together with the extension 27 serves to keep the upper portion of the pipe 5 and the lower portion of the casing 8 from clogging with sand, or mud or snow at the mouth of the pipe 5. The opening 19 in the plate 17 forms a sharp knife edge in said plate against which the valve 23 seats and as the valve has a flexible movement, it is always sure to seat itself and stop the flow of sand.

As a means for raising and lowering the valve 23 and for supporting it in its closed position, I have provided a rock lever 28 which is pivoted at 29 to spaced ears 30 projecting from the casing 8. The rock lever 28 is pivoted at 31 to a suitable link 32 which may in turn be pivoted to a rocking lever 33 pivoted at 34, to a suitable bracket 35, carried at the under side of the floor 1. A spring 36 connected to the floor and to the rocking lever 33, will operate to hold the valve in its raised position closing the opening 20, and preventing the flow of sand therethrough.

As a means for operating the locking lever 33 any suitable device may be employed such as the foot operated push pin 37, or a lever 38, such as indicated in Fig. 1<sup>a</sup>. In order that the throw of the valve 23 may be adjusted, I have provided one arm of the rock lever 28 with a plurality of openings 31<sup>a</sup>, and the link 32 may be connected with any one of said openings. Furthermore, the link may be connected to any one of the openings and thus be placed so as to avoid cross sills or other obstructions.

It is obvious that where a car is provided with a pneumatically controlled means for operating the brake and for supplying said

out, the mechanically controlled means for operating the brake which is usually supplied to a car may be operated, but there is no means in connection with the sanding device for supplying sand at this time. With my combined pneumatically controlled means and mechanically controlled means, the operator can operate the one or the other as he desires, and if the air should fail, he can at once resort to his mechanically controlled means. It is also well understood that many cars are provided with an air supply for controlling the brakes, while many cars have merely mechanically controlled devices. My improved sanding device may be applied to either car, and is suitable to the conditions existing in connection therewith. If the car has suitable air supply and it is not desired to use the mechanically controlled valve, all that is necessary is to omit the mechanical valve and its controlling parts and make only an opening 14 through the car, so that the opening 4 in the hopper is closed by the floor and the car is quickly equipped with a pneumatical sanding device. If on the other hand, the car has no air supply and it is desired to equip the same solely with a mechanically controlled device, then, the section 7 of the casing 6, may be entirely omitted and in place of the plate 17, a plate 39 such as shown in Fig. 5, substituted therefor. The plate 39 has a downwardly projecting portion 40 which engages between the lips 9 and 10 of the casing 8 and it is also provided with an opening 41 to receive the valve 23, which will register with an opening in the floor of the car and an opening in the bottom of the hopper.

In Fig. 4, I have shown the section 8 of the casing provided with the plate 39 ready for attachment to the floor of the car.

It will be obvious that minor changes in the details of construction herein shown may be made without departing from the spirit of my invention.

Having thus particularly described my invention, what I claim as new and desire to secure by Letters Patent, is: -

1. A sanding device including in combination, a hopper, a pipe for delivering the sand from the hopper, mechanically controlled means for controlling the flow of sand from the hopper into said pipe and pneumatically controlled means for delivering sand from the hopper to said pipe.

2. A sanding device including in combination, a hopper, a pipe for delivering the sand from the hopper, a casing adapted to be secured beneath said hopper to which said pipe is attached, a mechanically controlled valve for controlling the flow of sand from the hopper into said pipe, said casing having a pocket with a passage leading to said pipe and an air pipe connected to said casing ad-



adjacent said pocket, whereby the sand in said pocket may be delivered into said pipe.

3. A sanding device including in combination, a sectional casing, one of said sections having a downwardly projecting portion adapted to receive a pipe, a valve located in said section, the other section being shaped to form a pocket with a passage leading to said first named section, said pocket having an opening near its bottom adapted to receive an air pipe.

4. A sanding device including in combination, a sectional casing, one of said sections having a downwardly projecting portion adapted to receive a pipe, the other section being shaped to form a pocket with a passage leading to said first named section, a plate fitting the top of said casing, and having two openings therein, a downwardly inclined wall projecting from said plate and a valve carried by said first named section and fitting the opening in said plate.

5. A sanding device including in combination, a sectional casing, one of said sections having a downwardly projecting portion adapted to receive a pipe, the other section being shaped to form a pocket with a passage leading to said first named section, a plate fitting the top of said casing, and having two openings therein, a downwardly inclined wall projecting from said plate and a valve carried by said first named section, and fitting the opening in said plate, a hopper having two openings adapted to register with the openings in said plate, mechanically controlled means for operating said valve and an air pipe connected to said pocket for forcing the sand from said pocket into the first named section.

6. A sanding device including in combination, a casing, a plate supported by said casing and having an opening therein, a valve located in said casing, said valve being conical in shape and fitting said opening, a

valve stem projecting downwardly from said valve, a rock lever connected to said valve stem for operating the valve, an upwardly projecting stem threaded into said valve, and spaced stirring fingers carried by said stem.

7. A sanding device including in combination, a casing, a plate supported by said casing, and having an opening therein, a valve located in said casing, said valve being conical in shape and fitting said opening, a valve stem projecting downwardly from said valve, a rock lever connected to said valve stem for operating the valve, and a flexible extension carried by said downwardly projecting stem of the valve.

8. A sanding device including in combination, a casing, a plate carried by said casing, and having an opening therein, a valve located in said casing, said valve being conical in shape and fitting said opening, ears formed on the outer side of said casing, a rock lever pivoted to said ears and projecting into said casing, means for pivotally supporting said valve by said rock lever, and means for rocking said lever to operate said valve.

9. A sanding device including in combination, a hopper, a pipe for delivering sand from the hopper, a casing adapted to be secured beneath the hopper, to which said pipe is attached, a plate located between said hopper and said casing, and having an opening therein forming a sharp edge against which a valve may be seated, a valve located in said casing and adapted to engage said sharp edge in said opening, and means for raising and lowering said valve.

In testimony whereof I affix my signature, in presence of two witnesses.

ERNEST ARCHIBALD LONGMIRE.

Witnesses:

LILY J. SPANGLER,  
E. C. HATHAWAY.